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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,100	12/28/2001	Srinivas S. Pitla	10541-628	8418

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EXAMINER

LOPEZ, FRANK D

ART UNIT	PAPER NUMBER
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3745

DATE MAILED: 05/28/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/034,100

Applicant(s)

PITLA ET AL.

Examiner

F. Daniel Lopez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 18-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16, 18-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Amendment

Applicant's arguments filed March 24, 2003, have been fully considered but they are not deemed to be persuasive.

Applicant argues that Kimura et al (5,941,161) fails to teach an anti-rotation groove formed to complement an arcuate outer surface of a skirt. Applicant is mistaken. The anti-rotation groove of Kimura et al (5,941,161) is circumferential, formed between a shoulder of the crankcase housing (11) and a shoulder formed by the cylinder housing (12).

Applicant argues that each of the pistons of Terauchi (5,615,599) has a connection portion with integral arms extending from its inner surface toward the interior of the cylinder housing. These connection portions are not arcuate and do not define the shape of the skirt. Applicant is mistaken. For example, fig 13 and 14 show an arcuate outer surface (884b) in a complementary groove (612b), and which defines, in part the skirt of the piston.

Applicant argues that Rasmussen does not disclose a compressor, rather it discloses an engine or pump; that the body is not complementary with the bore, since the piston rod is substantially smaller than the bore; or that the external bearing surface 16 of the skirt defines the shape of the skirt. Applicant is mistaken. A compressor is a type of pump, therefore disclosing a pump inherently discloses a compressor. The body (3) is complementary with the bore, and the piston includes the body (3) and the skirt (5) connected together by the rod (4). All the different embodiments of the external bearing surface (e.g. 16) are part of, and therefore, partially defines the skirt.

Applicant argues that the skirt of Kimura et al (6,010,313) does not extend from the body; or that the dovetail keyway is not arcuate, and is not an outer surface defining the shape of the skirt. Applicant is mistaken. The dovetail keyway includes, at each of two sides, an arcuate outer surface; and in part defines the skirt, which extends from the body (either defined by 33, 35, or by way of rod 35).

Applicant argues that Hiramatsu et al fails to teach an anti-rotation groove formed to complement an arcuate outer surface of a skirt; that the second radius of curvature (of the arcuate surface) is offset from the first radius of the body; with a center of the

second radius between the center of the first radius and the circumference of the body. Applicant is mistaken. The anti-rotation groove is circumferential, formed between a shoulder of the crankcase housing (11) and a shoulder formed by the cylinder housing (12, similar to Kimura et al 5,941,161). The center of radius of curvature of the arcuate surface is either L1 (fig 1), since that is the center of curvature of the inner surface of the crankcase housing; or within a projection of the body fig 7).

Applicant argues that the 103 rejection involving Masnik must be withdrawn, since there was no reference by Masnik cited in either the 892 or the 1449. The 103 rejection has a typo, which included the name of Masnik, but the 103 rejection is clear that there is no teaching of Masnik used to make the rejection. Therefore, the 103 rejection will not be withdrawn.

In all of the above arguments, applicant appears to take a narrow view of the limitations of the claims. It is understood that the limitations are viewed as broadly as possible. By viewing the limitations broadly, it is clear that the rejections are proper.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Objections

Claim 12 is objected to because of the following informalities: in claim 12 line 3 "a the front head" should be --the front end--, since it refers back to that of claim 11 line 3); in claim 12 line 4 "a the" should be --the--. Appropriate correction is required.

Double Patenting

Applicant is advised that should claims 3-5 be found allowable, claims 21-23, respectively, will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

Claims 1-5, 8, 9, 21-23, 26 and 27 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Kimura et al (5,941,161).

Claims 1 and 6-10 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by either Terauchi (5,615,599) or Rasmussen.

Claims 1 and 8-10 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Kimura et al (6,010,313).

Claims 1-5, 8-10, 21-23, and 26-28 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Hiramatsu et al.

Claim Rejections - 35 USC § 103

Claims 2-5 and 11-28 are rejected under 35 U.S.C. § 103 as being unpatentable over Rasmussen. Rasmussen discloses a piston anti-rotation mechanism for a swash plate compressor comprising a housing having an inner wall and a front end connected to an inner wall defining a crank case; a plurality of piston receiving bores (1) formed in the front end adjacent one of a plurality of anti-rotation grooves (22) formed in the inner wall; an anti-rotation piston having a skirt (13) extending from a bottom end of a body (3, 4), wherein the body has a first radius of curvature (for piston 3) and slidably movable in the bore; wherein the skirt has a planer outer surface (see e.g. fig 2) integrally connected to an arcuate outer surface with a second radius of curvature slidable in the anti-rotation groove; wherein the axis (19) of rotation of the skirt is within the piston, between the inner wall and the axis (1a) of rotation of the piston, and offset from the axis of rotation of the piston, to prevent rotation of the piston; wherein a swash plate (6) is angularly disposed about a first portion of a drive shaft (7), located in the crank case; wherein the skirt forms a plate receiving slot through which the swash plate angularly rotates to slidably move the piston along the bore; with the slot has first and second shoe pockets respectively formed in first and second walls; with a shoe (11, 12) in each pocket; but does not disclose that the second radius is greater than the first radius; or that the front end has a drive shaft side, through which the drive shaft extends.

Since it is not inventive to discover optimum or workable ranges by routine experimentation, unless the range is a critical range (i.e. the critical range produces an unexpected result, which is different in kind and not just in degree), and since making the second radius larger than the first radius is a workable range of values for the

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radius; it would have been obvious at the time the invention was made to one having ordinary skill in the art to make the second radius of Rasmussen larger than the first radius, as a matter of engineering expediency. Note that the applicant has the burden to prove that this value for the radius is a critical value.

Official notice is taken that a front end of a housing has a drive shaft side, through which a drive shaft extends, for the purpose of closing off the housing. It would have been obvious at the time the invention was made to one having ordinary skill in the art to make the front end of the housing of Rasmussen with a drive shaft side, through which a drive shaft extends, for the purpose of closing off the housing.

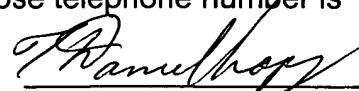
Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Lopez whose telephone number is (703) 308-0008. The examiner can normally be reached on Monday-Thursday from 6:30 AM -4:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Look, can be reached on (703) 308-1044. The fax number for this group is (703) 872-9302. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0861.



F. Daniel Lopez
Primary Examiner
Art Unit 3745
May 27, 2003